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97. A polarizer, comprising at least one birefringent layer, characterized in that at least one birefringent layer is the anisotropically absorbing one and has at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength.

98. The polarizer according to claim 97, comprising at least one birefringent anisotropically absorbing layer having at least two fragments of an unspecified shape, that differ from one another with respect of colour and/or the polarization axis direction.

99. The polarizer according to claim 97, further comprising an alignment layer formed of inorganic materials and/or different polymer materials.

100. The polarizer according to claim 97, further comprising a light-reflecting layer.

101. The polarizer according to claim 97, wherein at least one birefringent anisotropically absorbing layer is formed on surface of a substrate.

102. The polarizer according to claim 101, characterized in that said polarizer as the substrate, comprises a birefringent plate or film, at least one birefringent anisotropically absorbing layer being formed at angle of 45° to the main optical axis of said plate or film.

103. A polarizer, including a polarizing means for dividing a plurality of non-polarized light beams, constituting the light incident on the polarizer, into the same plurality of identical pairs of differently polarized light beams, and means for changing polarization of at least one plurality of the identically polarized light beams comprised by said plurality of pairs of differently polarized light beams, the polarizing means being implemented in the form of focusing optical elements optically registered with the means for changing polarization and comprising at least one birefringent layer adjacent to at least one optically isotropic layer, characterized in that at least one birefringent layer is the anisotropically absorbing one and has at least one refraction index that grows as the polarized light wavelength increases at least at a certain range of the wavelength.

104. The polarizer according to claim 103, wherein at least one birefringent anisotropically absorbing layer is implemented in the form of a set of bulk or phase lenses.

105. The polarizer according to claim 103, wherein the focusing optical element is implemented in the form of a zone plate.

106. The polarizer according to claim 105, wherein the zone plate is implemented in the form of

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form of an amplitude zone plate, even zones of which comprise at least one birefringent anisotropically absorbing layer adjacent to at least one optically isotropic layer, and the odd zones are made of the optically isotropic material.

107. The polarizer according to claim 105, wherein the zone plate is implemented in the form of a phase zone plate, at least one refraction index of which phase zone plate changing along at least one of directions according to a certain rule, including in a non-monotonic manner.

108. The polarizer according to claim 103, wherein the means for changing polarization comprises a sectioned translucent birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength.

109. The polarizer according to claim 103, wherein the means for changing polarization is implemented in the form of a sectioned translucent half-wave birefringent plate or layer having sections disposed in focuses or outside focuses of the focusing optical elements.

110. The polarizer according to claim 103, wherein the means for changing polarization is implemented in the form of a sectioned translucent birefringent plate having sections in the form of quarter-wave plates disposed outside focuses of the focusing optical elements, and sections in the form of plates determining a phase difference between the ordinary and extraordinary rays, which phase difference differs by π from the phase difference determined by said sections in the form of quarter-wave plates disposed in focuses of the focusing optical elements.

111. The polarizer according to claim 103, wherein the means for changing polarization is implemented in the form of a sectioned translucent polymerized planar layer of a liquid crystal having the twist structure, with rotation of the optical axis of the liquid crystal within thickness of said layer at angle of 90°, with sections disposed in focuses or outside focuses of the focusing optical elements.

112. The polarizer according to claim 103, wherein the means for changing polarization is implemented in the form of sectioned translucent achromatic birefringent plate.

113. A polarizer, including means for converting an incoming non-polarized light into a plurality of identical light beams, a polarizing means for dividing non-polarized light beams into polarized passing and reflected light beams having different polarizations, and a means for changing polarization and direction of the light beams reflected from the

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polarizing means, *characterized* in that said polarizer is implemented in the form of at least one film or plate, whereon applied are said means, the polarizing means comprising at least one birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength, or a birefringent layer having the constant, across the layer thickness, directions of the optical axes, or a birefringent layer having optical axes that change across the layer thickness according to a certain rule.

114. The polarizer according to claim 113, wherein the means for changing polarization and direction of the reflected light beams has a sectioned metallic mirror.

115. The polarizer according to claim 113, wherein the polarizing means comprises at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes, and comprising a quarter-wave plate upstream of the sectioned metallic mirror.

116. The polarizer according to claim 113, comprising at least one layer of a cholesteric liquid crystal as at least one birefringent layer having directions of the optical axes that change across the layer thickness according to a certain rule.

117. The polarizer according to claim 116, wherein at least one layer of a cholesteric liquid crystal is made of a polymer cholesteric liquid crystal.

118. The polarizer according to claim 116, wherein at least one layer of a cholesteric liquid crystal has, across the thickness, a gradient of the cholesteric spiral pitch and, as the result, has the spectrum width of the light selective reflection band of not less than 100 nm.

119. The polarizer according to claim 116, comprising at least three layers of cholesteric liquid crystals having the light selective reflection bands in three different spectrum ranges.

120. The polarizer according to claim113, wherein the means for converting the incoming non-polarized light is implemented in the form of a system of microlenses or microprisms focusing the light beams coming out of them in the direction towards interior of the polarizer.

121. The polarizer according to claim 120, wherein the system of microlenses is implemented in the form of positive cylindrical microlenses that completely cover the surface of the polarizer.

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122. The polarizer according to claim 114, characterized in that on a first surface of a film or plate it comprises a system of microlenses and a sectioned metallic mirror optically registered with said system of microlenses, and on a second surface of a film or plate it comprises at least one layer of a cholesteric liquid crystal.

123. The polarizer according to claim 114, characterized in that on the first surface of a film or plate it comprises a system of microlenses, a sectioned metallic mirror optically registered with said system of microlenses, and a quarter-wave plate, and on the second surface it comprises at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

124. The polarizer according to claim 114, characterized in that on the first surface of a film or plate it comprises a sectioned metallic mirror, and on the second surface of a film or plate sequentially applied are a system of microlenses optically registered with sections of the metallic mirror, and at least one layer of a cholesteric liquid crystal.

125. The polarizer according to claim 114, characterized in that on the first surface of a film or plate it comprises a sectioned metallic mirror and a quarter-wave plate, and on the second surface of a film or plate sequentially applied are a system of microlenses optically registered with sections of the metallic mirror, and at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

126. The polarizer according to claim 114, comprising at least two laminated films or plates, on the external surface of a first film or plate applied is a first system of microlenses, on the internal surface of a first or second film or plate applied is a sectioned metallic mirror, and on the external surface of the second film or plate additionally applied are a second system of microlenses optically registered with sections of the metallic mirror and with the first system of microlenses, and at least one layer of a cholesteric liquid crystal.

127. The polarizer according to claim 114, comprising at least two laminated films or plates, on the external surface of the first film or plate applied is the first system of microlenses, on the internal surface of the first or second film or plate applied are the sectioned metallic mirror and the quarter-wave plate, on the external surface of the second film or plate additionally applied are the second system of microlenses optically registered

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with sections of the metallic mirror and with the first system of microlenses, and at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

128. The polarizer according to claim 114, comprising at least two laminated films or plates, on the external surface of the first film or plate applied is a system of microprisms, on the internal surface of the first or second film or plate applied is a sectioned metallic mirror optically registered with the system of microprisms, on the external surface of the second film or plate applied are is one layer of a cholesteric liquid crystal.

129. The polarizer according to claim 114, comprising at least two laminated films or plates, on the external surface of the first film or plate applied is a system of microprisms, on the internal surface of the first film or plate ~~sequentially~~ applied are the sectioned metallic mirror optically registered with the system of microprisms, a quarter-wave plate, on the external surface of the second film or plate applied is at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

130. The polarizer according to any one of claims 97, 103, 113, wherein at least one birefringent anisotropically absorbing layer has at least one refraction index that is directly proportional to the polarized light wavelength at least at a certain range of the wavelength.

131. The polarizer according to any one of claims 97, 103, 113, wherein at least one birefringent anisotropically absorbing layer has the thickness whereat realized is the interference extremum at output of the polarizer at least for one light linearly-polarized component.

132. The polarizer according to claim 131, wherein thickness of at least one birefringent anisotropically absorbing layer satisfies the condition of obtaining, at output of the polarizer, the interference minimum for one linearly-polarized light component and the interference maximum for the other orthogonal linearly-~~polarized~~ light component.

133. The polarizer according to any one of claims 97, 103, 113, further comprising an optically isotropic layer, whose refraction index coincides with, or maximally proximate to one of indices of the birefringent anisotropically absorbing layer.

134. The polarizer according to any one of claims 97, 103, 113, further comprising birefringent layer one refraction index of which layer coincides with, or maximally proximate to one of indices of the birefringent anisotropically absorbing layer, and the

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second refraction indices of the birefringent layer and birefringent anisotropically absorbing layer differ from one another.

135. The polarizer according to any one of claims 97, 103, 113, wherein at least one birefringent anisotropically absorbing layer is formed:

of at least one organic salt of a dichroic anionic dye having general formula:

{Chromogen} - $(XO^-M^+)_n$, where Chromogen is a dye chromophore system; **X** = CO, SO_2, OSO_2, $OPO(O^-M^+)$; **M** = RR`NH[2]; RR`R``NH; RR`R``R^N; RR`R``^P, when R, R`, R``, R^ = CH_3, ClC_2H_4., C_2H_5, C_3H_7, C_4H_9, $C_6H_5CH_2$, substituted phenyl or heteroaryl; $YH-(CH_2-CH_2Y)_m-CH_2CH_2$, Y =O, or NH, m=0-5; N-alkylpyridinium cation, N-alkylchinolinium cation, N-alkylimidazolinium cation, N-alkylthiazolinium cation, etc.; **n** = 1-7;

or of at least one asymmetric mixed salt of a dichroic anionic dye with different cations of general formula:

$(M_1^+O^-X'-)_m[M_1^+O^-X'-(CH_2)_p-Z-]_g$**{Chromogen}**$[-Z-(CH_2)_p-XO^-M^+]_f(-XO^-M^+)_n$,

where:

Chromogen is a dye chromophore system; **Z** =SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1 - 10; f = 0-9; g = 0-9; n = 0-9, m = 0-9, n+f = 1-10: m+g = 1-10; **X, X'** = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** ≠ **M_1, M, M_1** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3, $RR`NH_2$, RR`R``NH; RR`R''R*N; RR`R``R*P, where R,R`, R``, R* = alkyl or substituted alkyl of the following type: CH_3 ClC_2H_4, HOC_2H_4, C_2H_5, C_3H_7, C_4H_9, $C_6H_5CH_2$, substituted phenyl or heteroaryl, $YH-(CH_2-CH_2Y)_k-CH_2CH_2-$, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkythiazolinium etc.;

or of at least one associate of a dichroic anionic dye with surface-active cation and/or amphoteric surfactant of general formula:

$(M^+O^-X`-)_m[M^+O^-X'-(CH_2)_p-Z-]_g$ **{Chromogen}** $[-Z-(CH_2)_p-XO^-SUR]_f$ $(XO^-SUR)_n$,

where **Chromogen** is a dye chromophore system; **Z**=SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1 - 10; f = 0-4; g =0-9; n = 0-4, m = 0-9, n+f = 1-4; m+g = 0-9; **X, X'** = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3, $RR`NH_2$, RR`R``NH; RR`R''R*N; RR`R``R*P, where R,R`, R``, R* = alkyl or substituted alkyl of the following type

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following type: CH_3 ClC_2H_4, HOC_2H_4, C_2H_5 - $C_{10}H_{21}$, $C_6H_5CH_2$, substituted phenyl or heteroaryl, YH-$(CH_2$-$CH_2Y)_k$-CH_2CH_2-, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkylthiazolinium, etc.; K'SUR$^+$, **SUR** = KSUR$^+$, K'SUR$^+$, AmSUR, where: KSUR$^+$ and K'SUR$^+$ are surface-active cations, AmSUR is amphoteric surfactant;

or of at least one associate of a dichroic cationic dye with a surface-active anion and/or an amphoteric surface-active dye of general formula:

$(M^+O^-X\text{-})_m$ $[M^+O^-X'\text{-}(CH_2)_p\text{-}Z\text{-}]_g$ {Chromogen$^+$} **SUR**, where **Chromogen** is a dye chromophore system; **Z** =SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1-10; g = 0 -1; m = 0-1; m+g=1; X = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3 $RR`NH_2$; RR`R``NH; RR`R``R*N; RR`R``R*P, where R, R`, R``, R* = alkyl or substituted alkyl of the following type: CH_3, ClC_2H_4, HOC_2H_4, C_2H_5 - $C_{10}H_{21}$, $C_6H_5CH_2$, substituted phenyl or heteroaryl, YH-$(CH_2$-$CH_2Y)_k$-CH_2CH_2, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type: N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkylthiazolinium, etc.; KSUR$^+$ (surface-active cation), **SUR** = ASUR$^-$, AmSUR, where: ASUR$^-$ is surface active cation, AmSUR is amphoteric surfactant;

or at least of one associate of a dichroic cationic dye with a surface-active cation and/or amphoteric surfactant of general formula:

{Chromogen}-$[Z\text{-}(CH_2)_p$ - X^+ RR`R`` SUR$]_n$**, where **Chromogen** is a dye chromophore system; **Z** = $SO_2NH$, $SO_2$, CONH, CO, O, S, NH, $CH_2$; p = 1-10; **X** = N, P; R, R`, R`` = alkyl or substituted alkyl of the following type: CH_3, ClC_2H_4, HOC_2H_4, C_2H_5, C_3H_7, **SUR =ASUR$^-$, AmSUR, where: ASUR$^-$ is a surface-active anion, AmSUR is an amphoteric surfactant; **n** = 1-4;

or of at least one water-insoluble dichroic dye and/or a pigment that do not contain ionogenic or hydrophilic groups;

or of at least one low-molecular thermotropic liquid-crystal substance being a dichroic dye or containing, as a component, a liquid-crystal and/or a dichroic dye other than liquid-crystal dye and vitrified in this or other manner, for example after application of a layer by curing using ultraviolet radiation;

or of at least on polymer material other than liquid-crystal one, with a controlled degree of

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hydrophilicity, dyed with a dichroic dye and/or an iodine compounds;
or of at least one polymer thermoptropic liquid-crystal and/or non-liquid crystal substance comprising solved in mass and/or chemically bonded with a polymer chain dichroic dyes;
or at least of one dichroic dye capable of forming a lyotropic liquid-crystal phase;
or at least of one dichroic dye of the polymer structure;
or at least of one water-soluble organic dye capable of forming a stable lyotropic liquid-crystal phase of general formula **{Chromogen}** **($(SO_3M)_n$)**, where **Chromogen** is a dye chromophore system; M - H^+, a inorganic cation;
or of their mixes.

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L2

136. A liquid-crystal display element comprising a layer of liquid crystal disposed between a first and second plates, at least on one of which plates disposed are electrodes and a polarizer, characterized in that at least one polarizer comprises at least one birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength. 97

137. The liquid-crystal display element according to claim 136, wherein one polarizer comprises at least two birefringent anisotropically absorbing layers of different colours with mutually perpendicular directions of the polarization axes, which layers are applied one over the other, or on at least on one intermediate layer that separates them, and on the other plate the polarizer comprises at least one birefringent anisotropically absorbing layer of a grey colour having the direction of the polarization axes that coincides with direction of the polarization axis of one of the birefringent anisotropically absorbing layers on the first plate.

L2

138. The liquid-crystal display element according to claim 136, further comprising on one plate a diffusion-reflection layer, which layer simultaneously serves as an electrode, and at least one birefringent anisotropically absorbing layer being disposed immediately on the reflecting layer or a dielectric sub-layer applied on the reflecting layer.

L2

139. A liquid-crystal display element comprising a liquid crystal layer disposed between a first and second plates, at least on one of which plates disposed are electrodes and a polarizer, characterized in that at least one polarizer comprises:

a polarizing means for dividing a plurality of non-polarized light beams of the light incident on the polarizer into the same plurality of identical pairs of differently polarized light beams, implemented in the form of focusing optical elements, each of which 157

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elements comprises at least one birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength, adjacent to at least one optically isotropic layer; said polarizing means being optically registered with a means for changing polarization of at least one plurality of identically polarized light beams comprised by said plurality of pairs of differently polarized light beams.

140. The liquid-crystal display element according to claim 139, wherein at least one birefringent layer is implemented in the form of a plurality of bulk or phase lenses.

141. The liquid-crystal display element according to claim 139, wherein the focusing optical element is implemented in the form of a zone plate.

142. The liquid-crystal display element according to claim 141, wherein the zone plate is implemented in the form of an amplitude zone plate, even zones of which comprise at least one birefringent anisotropically absorbing layer adjacent to at least one optically isotropic layer, and the odd zones are made of the optically isotropic material.

143. The liquid-crystal display element according to claim 141, wherein the zone plate is implemented in the form of a phase zone plate, at least one refraction index of which phase zone plate changing along at least one of directions according to a certain rule, including in a non-monotonic manner.

144. The liquid-crystal display element according to claim 139, wherein the means for changing polarization comprises a sectioned translucent birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength.

145. The liquid-crystal display element according to claim 139, wherein the means for changing polarization is implemented in the form of a sectioned translucent half-wave birefringent plate or layer having sections disposed in focuses or outside focuses of the focusing optical elements.

146. The liquid-crystal display element according to claim 139, wherein the means for changing polarization is implemented in the form of a sectioned translucent birefringent plate having sections in the form of quarter-wave plates disposed outside focuses of the focusing optical elements, and sections in the form of plates determining a phase difference between the ordinary and extraordinary rays, which phase difference differs by π from the phase difference determined by said sections in the form of quarter-wave plates

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disposed in focuses of the focusing optical elements.

147. The liquid-crystal display element according to claim 139, wherein the means for changing polarization is implemented in the form of a sectioned translucent polymerized planar layer of a liquid crystal having the twist structure, with rotation of the optical axis of the liquid crystal within thickness of said layer at angle of 90°, with sections disposed in focuses or outside focuses of the focusing optical elements.

148. The liquid-crystal display element according to claim 139, wherein the means for changing polarization is implemented in the form of sectioned translucent achromatic birefringent plate.

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149. A liquid-crystal display element, comprising a layer of a liquid crystal disposed between a first and second plates, at least on one of which plates being disposed electrodes and a polarizer, characterized in that at least one polarizer is implemented in the form of at least one film or plate, whereon applied are means for converting the incoming non-polarized light into a plurality of identical light beams, a polarizing means for dividing non-polarized light beams into polarized passing and reflected light beams having different polarizations, which polarizing means has at least one birefringent anisotropically absorbing layer having at least one refraction index that grows as the polarizable light wavelength increases at least at a certain range of the wavelength, or a birefringent layer having the constant, across the layer thickness, directions of the optical axes, or a birefringent layer having the directions of the optical axes that change across the layer thickness according to a certain rule, and means for changing polarization and direction of the light beams reflected from the polarizing means.

150. The liquid-crystal display element according to claim 149, wherein the means for changing polarization and direction of the reflected light beams has a sectioned metallic mirror.

151. The liquid-crystal display element according to claim 149, wherein the polarizing means comprises at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes, and comprising a quarter-wave plate upstream of the sectioned metallic mirror.

152. The liquid-crystal display element according to claim 149, comprising at least one layer of cholesteric liquid crystal as at least one birefringent layer having directions of the optical axes that change across the layer thickness according to a certain rule.

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153. The liquid-crystal display element according to claim 149, wherein the means for converting the incoming non-polarized light is implemented in the form of a system of microlenses or microprisms focusing the light beams coming out of them in the direction towards the interior of the polarizer.

154. The liquid-crystal display element according to claim 150, wherein on a first surface of a film or plate the polarizer comprises a system of microlenses and a sectioned metallic mirror optically registered with said system of microlenses, and on a second surface of a film or ~~plate it comprises at least one layer of a cholesteric liquid crystal.~~

155. The liquid-crystal display element according to claim 150, wherein on the first surface of a film or plate the polarizer comprises a system of microlenses, a sectioned metallic mirror optically registered with said system of microlenses, and a quarter-wave plate, and on the second surface it comprises at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

156. The liquid-crystal display element according to claim 150, wherein the polarizer comprises at least two laminated films or plates, on the external surface of a first film or plate applied is a first system of microlenses, on the internal surface of a first or second film or plate applied is a sectioned metallic mirror, and on the external surface of the second film or plate additionally applied are a second system of microlenses optically registered with sections of the metallic mirror and with the first system of microlenses, and at least one layer of a cholesteric liquid crystal.

157. The liquid-crystal display element according to claim 150, wherein the polarizer comprises at least two laminated films or plates, on the external surface of the first film or plate applied is the first system of microlenses, on the internal surface of the first or second film or plate applied are a sectioned metallic mirror and a quarter-wave plate, on the external surface of the second film or plate additionally applied are a second system of microlenses optically registered with sections of the metallic mirror and with the first system of microlenses, and at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

158. The liquid-crystal display element according to claim 150, wherein the polarizer comprises at least two laminated films or plates, on the external surface of a first film or

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plate applied is a system of microprisms, on the internal surface of the first or second film or plate applied is a sectioned metallic mirror optically registered with the system of microprisms, on the external surface of the second film or plate applied is one layer of a cholesteric liquid crystal.

159. The liquid-crystal display element according to claim 150, wherein the polarizer comprises at least two laminated films or plates, on the external surface of the first film or plate applied is a system of microprisms, on the internal surface of the first film or plate sequentially applied are a sectioned metallic mirror optically registered with the system of microprisms, a quarter-wave plate, on the external surface of the second film or plate applied is at least one birefringent anisotropically absorbing layer or birefringent layer having the constant, across the layer thickness, directions of the optical axes.

160. The liquid-crystal display element according to any one of claims 136, 139, 149, wherein at least one birefringent anisotropically absorbing layer has at least one refraction index that is directly proportional to the polarizable light wavelength at least at a certain range of the wavelength.

161. The liquid-crystal display element according to any one of claims 136, 139, 149, wherein at least one birefringent anisotropically absorbing layer of at least one polarizer has the thickness whereat realized is the interference extremum at output of the polarizer at least for one light linearly-polarized component.

162. The liquid-crystal display element according to claim 161, wherein thickness of at least one birefringent anisotropically absorbing layer satisfies the condition of obtaining, at output of the polarizer, the interference minimum for one linearly-polarized light component and the interference maximum for the other orthogonal linearly-polarized light component.

163. The liquid-crystal display element according to any one of claims 136, 139, 149, wherein at least one birefringent anisotropically absorbing layer of at least one polarizer is formed:

of at least one organic salt of a dichroic anionic dye having general formula:

{Chromogen} - $(XO^-M^+)_n$, where **Chromogen** is a dye chromophore system; **X** = CO, SO_2, OSO_2, $OPO(O^-M^+)$; **M** = $RR`NH_2$; $RR`R``NH$; $RR`R``R^N$; $RR`R``^P$, when R, R`, R``, R^ = CH_3, ClC_2H_4., C_2H_5, C_3H_7, C_4H_9, $C_6H_5CH_2$, substituted phenyl or heteroaryl; $YH-(CH_2-CH_2Y)_m-CH_2CH_2$, Y=O, or NH, m=0-5; N-alkylpyridinium cation, N-

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alkylchinolinium cation, N-alkylimidazolinium cation, N-alkylthiazolinium cation, etc.; **n** = 1-7;

or of at least one asymmetric mixed salt of a dichroic anionic dye with different cations of general formula:

$(M_1^+O^-X'-)_m[M_1^+O^-X'-(CH_2)_p-Z-]_g\{Chromogen\}[-Z-(CH_2)_p-XO^-M^+]_f(-XO^-M^+)_n$,

where:

Chromogen is a dye chromophore system; **Z** =SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1 - 10; f = 0-9; g = 0-9; n = 0-9, m = 0-9, n+f = 1-10: m+g = 1-10; **X, X'** = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** ≠ **M₁**, **M, M₁** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3, $RR`NH_2$, RR`R``NH; RR`R``R*N; RR`R``R*P, where R,R`, R``, R* = alkyl or substituted alkyl of the following type: CH_3 ClC_2H_4, HOC_2H_4, C_2H_5, C_3H_7, C_4H_9, $C_6H_5CH_2$, substituted phenyl or heteroaryl, $YH-(CH_2-CH_2Y)_k-CH_2CH_2-$, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkythiazolinium etc.;

or of at least one associate of a dichroic anionic dye with surface-active cation and/or amphoteric surfactant of general formula:

$(M^+O^-X`-)_m[M^+O^-X'-(CH_2)_p-Z-]_g$ {Chromogen} $[-Z-(CH_2)_p-XO^-SUR]_f$ $(XO^-SUR)_n$, where **Chromogen** is a dye chromophore system; **Z**=SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1 - 10; f = 0-4; g =0-9; n = 0-4, m = 0-9, n+f = 1-4; m+g = 0-9; **X, X'** = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3, $RR`NH_2$, RR`R``NH; RR`R''R*N; RR`R``R*P, where R,R`, R``, R* = alkyl or substituted alkyl of the following type: CH_3 ClC_2H_4, HOC_2H_4, C_2H_5 - $C_{10}H_{21}$, $C_6H_5CH_2$, substituted phenyl or heteroaryl, $YH-(CH_2-CH_2Y)_k-CH_2CH_2-$, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkylthiazolinium, etc.; $K'SUR^+$, **SUR** = $KSUR^+$, $K'SUR^+$, AmSUR, where: $KSUR^+$ and $K'SUR^+$ are surface-active cations, AmSUR is amphoteric surfactant;

or of at least one associate of a dichroic cationic dye with a surface-active anion and/or an amphoteric surface-active dye of general formula:

$(M^+O^-X-)_m$ $[M^+O^-X'-(CH_2)_p-Z-]_g$ $\{Chromogen^+\}$ **SUR,** where **Chromogen** is a dye chromophore system; **Z** =SO_2NH, SO_2, CONH, CO, O, S, NH, CH_2; p = 1-10; g = 0 -1; m

B' cont'd.

= 0-1; m+g=1; X = CO, SO_2, OSO_2, $PO(O^-M^+)$; **M** = H; inorganic cation of the following type: NH_4, Li, Na, K, Cs, Mg, Ca, Ba, Fe, Ni, Co, etc.; organic cation of the following type: RNH_3 $RR`NH_2$; RR`R``NH; RR`R``R*N; RR`R``R*P, where R, R`, R``, R* = alkyl or substituted alkyl of the following type: CH_3, ClC_2H_4, HOC_2H_4, C_2H_5 - $C_{10}H_{21}$, $C_6H_5CH_2$, substituted phenyl or heteroaryl, $YH-(CH_2-CH_2Y)_k-CH_2CH_2$, Y = O, or NH, k = 0-10; heteroaromatic cation of the following type: N-alkylpyridinium, N-alkylchinolinium, N-alkylimidazolinium, N-alkylthiazolinium, etc.; $KSUR^+$ (surface-active cation), **SUR** = $ASUR^-$, AmSUR, where: $ASUR^-$ is surface active cation, AmSUR is amphoteric surfactant;

or at least of one associate of a dichroic cationic dye with a surface-active cation and/or amphoteric surfactant of general formula:

{Chromogen}-[Z-$(CH_2)_p$ - X^+ RR`R``SUR]$_n$**, where **Chromogen** is a dye chromophore system; **Z** = $SO_2NH$, $SO_2$, CONH, CO, O, S, NH, $CH_2$; p = 1-10; **X** = N, P; R, R`, R`` = alkyl or substituted alkyl of the following type: CH_3, ClC_2H_4, HOC_2H_4, C_2H_5, C_3H_7, **SUR =$ASUR^-$, AmSUR, where: $ASUR^-$ is a surface-active anion, AmSUR is an amphoteric surfactant; **n** = 1-4;

or of at least one water-insoluble dichroic dye and/or a pigment that do not contain ionogenic or hydrophilic groups;

C2 ~~or of at least one low-molecular thermotropic liquid-crystal substance being a dichroic dye~~ or containing, as a component, a liquid-crystal and/or a dichroic dye other than liquid-crystal dye and vitrified in this or other manner, for example after application of a layer by curing using ultraviolet radiation;

or of at least on polymer material other than liquid-crystal one, with a controlled degree of hydrophilicity, dyed with a dichroic dye and/or an iodine compounds;

or of at least one polymer thermoptropic liquid-crystal and/or non-liquid crystal substance comprising solved in mass and/or chemically bonded with a polymer chain dichroic dyes;

or at least of one dichroic dye capable of forming a lyotropic liquid-crystal phase;

or at least of one dichroic dye of the polymer structure;

or at least of one water-soluble organic dye capable of forming a stable lyotropic liquid-crystal phase of general formula **{Chromogen} $(SO_3M)_n$**, where Chromogen is a dye chromophore system; M - H^+, a inorganic cation;

or of their mixes.